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PATEL, SHAMBHAVI K				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/532,089

Applicant(s)

BOUTIN ET AL.

Examiner

SHAMBAVI PATEL

Art Unit

2128

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 February 2006.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 38-74 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 38-74 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 30 September 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date 07/19/05
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

1. Claims 38-74 have been presented for examination. Claims 1-37 have been cancelled.

Priority

2. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d).

Specification

3. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Information Disclosure Statement

4. The information disclosure statement (IDS) submitted on 19 July 2005 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the Examiner has considered the IDS as to the merits.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 38-74 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- i. regarding **claims 38 and 44**, the terms “departure state”, “elementary operations”, and “arrival state”, and the limitation “identifying data flows circulating on the network as a function of the mapping” are vague and indefinite. What are “data flows”? How are they affected by the mapping of the elementary operations?
- ii. regarding **claim 39**, the limitations “supplementary elementary operation of control” and “depending on a state of the service in which the system finds itself” are vague and indefinite. The meaning of the first is unclear, and regarding the latter, it is unclear how the state in which the system “finds itself” is determined. There is insufficient antecedent basis for the term “the single service”.
- iii. regarding **claim 40**, the limitation “...of the service whose states are the states of the service” is vague and indefinite.
- iv. regarding **claim 41**, the terms “free data”, “frames”, and “unused frame sites” are vague and indefinite. There is insufficient antecedent basis for the limitation “writes and reads *in the frames*”.
- v. regarding **claim 42**, the limitations “executions of drivers, writes and reads in the frames”, “frame transfer to a network”, “reading and writing frames” are vague and indefinite.
- vi. regarding **claim 43**, the terms “variants” and “calculator variants” are vague and indefinite.
- vii. regarding **claim 49**, the limitations “in modes transverse to common services are grouped in phases”, “the set of formalized use cases represent all responses or absences of response of the system in all phases” are vague and indefinite. What is a mode? What are “common services”? What is a “phase”? What does “transverse to” mean?
- viii. regarding **claim 50**, the limitation “outside the direct control of the services” is vague and indefinite.
- ix. regarding **claim 51**, the limitation “phases of the services” is vague and indefinite.
- x. regarding **claim 54**, the term “synthetic view” is vague and indefinite.

- xi. regarding **claim 59**, the limitation “the modes in which the calculator must function” is vague and indefinite.
- xii. regarding **claim 60**, the term “a synthetic view” is vague and indefinite.
- xiii. regarding **claim 61**, the term “data frames” is vague and indefinite, and there is insufficient antecedent basis for the term.
- xiv. regarding **claim 62**, the term “frame” is vague and indefinite, and there is insufficient antecedent basis for the term “for each frame”.
- xv. regarding **claim 63**, the term “synthetic view” is vague and indefinite.
- xvi. regarding **claim 65**, the term “service variants” is vague and indefinite.
- xvii. regarding **claim 66**, the term “variants of electronic components” is vague and indefinite.
- xviii. regarding **claim 67**, the term “synthetic view” is vague and indefinite and there is insufficient antecedent basis for the term.
- xix. regarding **claim 69**, the limitation “a set of frames exchanged” is vague and indefinite.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. Claims 38-74 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

- i. The Examiner asserts that the current state of the claim language is such that a reasonable interpretation of the claims would not result in any tangible result. **Claim 38 and 44** are directed to identifying data flows circulating on the networks as a function of the mapping and/or identifying a specification of the calculator interfaces as a function of the mapping. Specifically, the claimed subject matter does not produce a tangible result because the claimed subject matter fails to produce a result that is limited to having real world value rather than a result that may be interpreted to be abstract in nature as, for example, a thought, a

computation, or manipulated data. This produced result remains in the abstract and, thus, fails to achieve the required status of having real world value.

- ii. **Claim 44** appears to be a system claim (the preamble recites "a design for a specification of a hardware and software system..."), but the claim recites only method steps, and claims no hardware components.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. **Claims 38-74 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cuatto ("A Case Study in Embedded Systems Design: An Engine Control Unit") in view of Coleman ("Introducing ObjectCharts or How to Use StateCharts in Object-Oriented Design").**

Regarding claim 38:

Cuatto discloses a method for designing a specification of a hardware and software system, comprising:

- a. defining services and, for each service, use cases (**section 2nd-3rd paragraphs**)
- b. associating each use case with at least one departure state of the system, and, for each departure state, an arrival state of the system (**section 2.1 1st paragraph: input, output**)
- c. defining operations, in the course of which, for each state, a set of elementary operations corresponding to the system response during arrival in the state is defined (**section 2.1 1st paragraph: transition function**)
- d. specifying system architecture defining electronic control units and networks (**section 3: electronic engine control unit, sensors networked to unit**)
- e. mapping elementary operations onto calculators (**section 4.3: partitioned behavior onto hardware and software**)
- f. executing at least one of: identifying data flows circulating on the networks as a function of the mapping (**section 2.1: communication**) and identifying a specification of the calculator interfaces as a function of the mapping (**section 2 1st paragraph: interface**).

Cuatto does not explicitly disclose associating a user request with each use case. **Coleman teaches** using finite state machines to represent services and use cases (**IV.A: services**) and associating user request with the use case (**IV.A: setting and cancelling alarm**). At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine the teachings of Cuatto and Coleman to use a method that is appropriate for analysis and design (**Coleman: Introduction**).

Regarding claim 39:

Cuatto discloses a method according to claim 38, wherein the mapping comprises, for each service, a choice among a plurality of mapping modes comprising: mapping the service onto a single calculator (**section 2 1st and 2nd paragraphs: mapping**), master-slave mapping, in which a supplementary elementary operation of control of the single service activates, depending on a state of the service in which the system finds itself, elementary operations of the service, the supplementary elementary operation being mapped onto one of the calculators (**section 2 1st and 2nd paragraphs: mapping and transition function**), distributed mapping, in which the elementary

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operations are distributed over at least two calculators (**section 2 1st and 2nd paragraphs: mapping**) and, onto each of the calculators, a supplementary elementary operation of control of the service is mapped and activates, depending on the state of the service in which the system finds itself, the elementary operations of the service mapped onto the calculators (**section 2.1 1st paragraph: transition function**).

Regarding claim 40:

Cuatto and Coleman teach a method according to claim 39, wherein the supplementary elementary operations are generated automatically with: as inputs, all data necessary for calculation of transitions of a control automation of the service whose states are the states of the service and as an output, a datum representing the state in which the service finds itself (**Cuatto: section 2.1 1st paragraph: input, output, and transition function**).and the transitions are transformations, via an elementary operation, of the user's requests (**Coleman: section III: transition**).

Regarding claim 41:

Cuatto discloses a method according to claim 38, wherein, in the identifying data flows, a state of each data flow is determined relative to a given electronic messaging system: free data, to be mapped into frames, data already mapped into frames and circulating on the network, and such that the data are produced in the calculators in which the frame is produced and consumed in the calculators in which the frame is consumed, and unused frame sites (**section 2.1 1st paragraph: uses a globally asynchronous locally synchronous communication semantics input, output, and transition function; figure 1: levels of hierarchy**)

Regarding claim 42:

Cuatto discloses a method according to claim 38, wherein, given a use case, a performance constraint is imposed on the use case and on certain of the elementary operations executed in the arrival state of the use case (**section 2 2nd paragraph: performance constraint**), a list of those executions of elementary operations, executions of drivers, writes and reads in the frames, taking into account of information by sensors and actuators, and frame transfer to a network that are implemented following mapping of the elementary operations is then automatically

synthesized (**section 3: drivers, sensors, actuators, sensors networked to unit; section 4.3: partitioned behavior onto hardware and software**), requirements of delay of execution and/or of response time of transmission, reading and writing frames, and execution of drivers and of elementary operations are then specified, response times of sensors and actuators are indicated (**section 2.1: reaction time; section 4.3 timing constraint**), a fact that a performance constraint is satisfied for a mapping of the elementary operations is validated or requirements of delay of execution and/or of response time to satisfy the performance constraint are specified (**section 4.2: simulation output**).

Regarding claim 43:

Cuatto discloses a method according to claim 38, wherein if, for a service having at least two variants, the variants have shared elementary operations, then the elementary operations are automatically mapped onto the same calculators or calculator variants during mapping of one of the variants (**section 2.1: shared resources**).

Regarding claim 44:

Cuatto discloses a device for design of a specification of a hardware and software system, comprising:

- a. means for defining services and, for each service, use cases (**section 2nd and 3rd paragraphs**)
- b. means for associating each use case with at least one departure state of the system and, for each departure state, an arrival state of the system (**section 2.1 1st paragraph: input, output**)
- c. means for defining operations, in the course of which, for each state, a set of elementary operations corresponding to the system response during arrival in the state is defined (**section 2.1 1st paragraph: transition function**)
- d. means for specifying system architecture defining electronic control units and networks (**section 3: electronic engine control unit, sensors networked to unit**)
- e. means for mapping elementary operations onto calculators (**section 4.3: partitioned behavior onto hardware and software**)

- f. and at least one of: means for identifying data flows circulating on the networks as a function of the mapping (**section 2.1: communication**) and means for identifying a specification of the calculator interfaces as a function of the mapping (**section 2 1st paragraph: interface**)

Cuatto does not explicitly disclose associating a user request with each use case. **Coleman teaches** using finite state machines to represent services and use cases (**IV.A: services**) and associating user request with the use case (**IV.A: setting and cancelling alarm**). At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine the teachings of Cuatto and Coleman to use a method that is appropriate for analysis and design (**Coleman: Introduction**).

Regarding claim 45:

Cuatto discloses a device according to claim 44, further comprising means for selecting a hierarchical description, selection of each selection means causing a different screen of the device to appear (**figures 1 and 2**).

Regarding claim 46:

Cuatto discloses a device according to claim 45, wherein, for at least one screen, the hierarchical description represents, at a first level of hierarchy, a plurality of services and, at a second level of hierarchy, a plurality of use cases for each service (**figures 1 and 2: services and use case**).

Regarding claim 47:

Coleman teaches a device according to claim 46, wherein, for at least one screen, each use case comprises an initial context or situation of the system, a user's request to the system, and a response of the system corresponding to a change of its state (**IV.A: setting and cancelling alarm**).

Regarding claim 48:

Cuatto discloses a device according to claim 46, wherein, in at least one screen, states and associated state transitions are defined for each use case of a service (**figure 2: state and transition**).

Regarding claim 49:

Cuatto discloses a device according to claim 44, wherein the states that function in modes transverse to common services are grouped in phases, each state is associated with one phase of the system, the set of formalized use cases represent all responses or absences of response of the system in all phases, these in total representing all combinations of modes of operation of a vehicle (**section 4.1: function blocks**).

Regarding claim 50:

Cuatto discloses a device according to claim 49, wherein each phase is composed of a set of combinations of modes of operation of the vehicle, the modes being transverse to the services and outside the direct control of the services (**section 4.1: function blocks**).

Regarding claim 51:

Cuatto discloses a device according to claim 45, wherein, for at least one screen, the hierarchical description represents a plurality of services at a first level of hierarchy and of phases of the service at a second level of hierarchy (**figure 2: functional mode**).

Regarding claim 52:

Cuatto discloses a device according to claim 47, wherein, for at least one screen, the hierarchical description represents a plurality of services at a first level of hierarchy and of states of the service at a second level of hierarchy (**figure 2: functional mode**).

Regarding claim 53:

Cuatto discloses a device according to claim 51, wherein, within the hierarchical description, a hierarchical level in a given state describes the elementary operations (**figure 1: operation**).

Regarding claim 54:

Cuatto discloses a device according to claim 45, wherein, for at least one screen, mapping of elementary operations onto components represented in a synthetic view is effected (**figure 1: view**).

Regarding claim 55:

Cuatto discloses a device according to claim 54, containing, for at least one screen, a synthetic view representing an envelope of a component and each elementary operation that the component controls or instructs (**figure 1: partitioning**).

Regarding claim 56:

Cuatto discloses a device according to claim 45, containing, for at least one screen, a synthetic view representing an envelope of a service and each elementary operation that the service comprises (**figures 3 and 4: envelope and elementary operation**).

Regarding claim 57:

Cuatto discloses a device according to claim 45, wherein, for at least one screen, at a first level of hierarchy, the hierarchical description represents the calculators of the system and, at a second level of hierarchy, elementary operations electronically monitored or controlled by each calculator (**figure 1: calculator and operation**).

Regarding claim 58:

Cuatto discloses a device according to claim 57, wherein, for each screen, a hierarchical level represents, for each calculator, the services that are mapped at least partly onto the calculator (**figure 1: service**).

Regarding claim 59:

Cuatto discloses a device according to claim 57, wherein, for each screen, a synthetic view represents, for each calculator, the modes in which the calculator must function (**figure 2: mode**).

Regarding claim 60:

Cuatto discloses a device according to claim 45, wherein, for at least one screen, a synthetic view represents at least one network and the components connected to it (**figure 2: view**).

Regarding claim 61:

Cuatto discloses a device according to claim 45, wherein, for at least one screen, at a first level of hierarchy, the hierarchical description represents the calculators of the system and, at a second level of hierarchy, for each calculator, the data frames are transported on buses to which the calculator and/or the electronic components directly connected to the calculator are connected (**section 2.1 modeling of shared resources**).

Regarding claim 62:

Cuatto discloses a device according to claim 45, wherein, for at least one screen, the hierarchical description represents the frames at a first level of hierarchy and, at a second level of hierarchy, for each frame, the data contained in the frames (**figure 3: data**).

Regarding claim 63:

Cuatto discloses a device according to claim 45, wherein, for at least one screen, a synthetic view represents components and/or networks and a projection of a service onto the components and/or networks (**figure 1: service**).

Regarding claim 64:

Cuatto discloses a device according to claim 45, wherein, for at least one screen, a hierarchical level describes, for each elementary operation, input and output interface data flows, and, for each data flow, a driver and the component and/or the elementary operation with which the data flow is exchanged (**figures 2 and 3**).

Regarding claim 65:

Cuatto discloses a device according to claim 45, wherein, for at least one screen, the hierarchical description represents, at a first level of hierarchy, a plurality of services and, at a second level of hierarchy, a plurality of service variants, for each service (**figure 3: service and variant**).

Regarding claim 66:

Cuatto discloses a device according to claim 45, wherein, for at least one screen, the hierarchical description represents, at a first level of hierarchy, a plurality of electronic components and, at a second level of hierarchy, a plurality of variants of electronic components, for each electronic component (**figures 3 and 4: component and variant**).

Regarding claim 67:

Cuatto discloses a device according to claim 45, wherein, for at least one synthetic view, a selection of an element of the synthetic view by a pointing device gives access to a representation of the functioning of the element (**sections 4.1 and 4.2: hierarchical models**).

Regarding claim 68:

Cuatto discloses a device according to claim 44, wherein, for a use case, given partial or complete mapping of the services, the set of elementary operations in the architecture and the set of data exchanged corresponding to execution of the use case are automatically identified (**section 4.3: partitioned behavior onto hardware and software**).

Regarding claim 69:

Cuatto discloses a device according to claim 44, wherein, for a use case, if a performance constraint is imposed on the use case (**section 2 2nd paragraph: performance constraint**), the set of elementary operations in the architecture, a set of frames exchanged, and a set of sensors necessary and/or a set of actuators activated are automatically identified (**section 3: drivers, sensors, actuators, sensors networked to unit; section 4.3: partitioned behavior onto hardware and software**), in such a manner as to assign respectively thereto specific

constraints of delay of execution, of delay of transmission, of delay of activation, and/or to validate the constraints already imposed (**section 2.1: reaction time; section 4.3 timing constraint**).

Regarding claim 70:

Cuatto discloses a device according to claim 44, further comprising, for objects, hardware components and/or services offered to the client, a graphic representation comprising: a contour representing the object, representations of other objects with which the object communicates, and representations of data exchanged with the other objects (**figure 3: object, communication and data**).

Regarding claim 71:

Cuatto discloses a device according to claim 70, wherein, when the envelope represents a hardware component, data representations are effected for a service (**figures 3 and 4: hardware and service**).

Regarding claim 72:

Cuatto discloses a device according to claim 44, further comprising, for each bus, a representation of components that are connected directly thereto and, for components directly connected to at least two buses, for each of these at least two buses, associated with the component, an identifier of each other bus to which the component is directly connected (**section 2.1 modeling of shared resources**).

Regarding claim 73:

Cuatto discloses a device according to claim 72, wherein the identifier is a graphical element (**figures 3 and 4**).

Regarding claim 74:

Cuatto discloses a manufactured article comprising: a computer storage means having a computer program for designing a specification of a hardware and software system, wherein the program comprises a code for execution of the method defined in claim 38 (**Introduction**).

Conclusion

8. **Examiner's Remarks:** Examiner has cited particular columns and line numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in their entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner. In the case of amending the claimed invention, Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied on for proper interpretation and also to verify and ascertain the metes and bounds of the claimed invention.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shambhavi Patel whose telephone number is (571) 272-5877. The examiner can normally be reached on Monday-Friday, 8:00 am – 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamini Shah can be reached on (571) 272-2279. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SKP

/Kamini S Shah/
Supervisory Patent Examiner, Art Unit 2128